## ABSTRACT

Peptide-based compounds containing four invariant cysteine residues which have been optionally oxidized to contain two intramolecular disulfide bonds, or modified forms where the cysteines are replaced are useful as preservatives and in preventing, treating, or ameliorating viral or microbial infection in animals and plants, and in inactivating endotoxin. These compounds, in one embodiment, are of the formula:

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$$A_1 - A_2 - A_3 - A_4 - A_5 - C_6 - A_7 - C_8 - A_9 - A_{10} - A_{11} - A_{12} - C_{13} - A_{14} - C_{15} - A_{16} - (A_{17} - A_{18})$$
 (1)

and the N-terminal acylated and/or C-terminal amidated or esterified forms thereof, which is either in the optionally -SH stablizied linear or in a cystine-bridged form wherein each of A<sub>1</sub> and A<sub>9</sub> is independently a basic amino acid;

each of  $A_2$  and  $A_3$  is independently a small amino acid;

each of  $A_5$ ,  $A_7$ ,  $A_{12}$ ,  $A_{14}$  and  $A_{16}$  is independently a hydrophobic amino acid;

A<sub>4</sub> is a basic or a small amino acid;

A<sub>10</sub> is a basic or a small amino acid or is proline;

A<sub>11</sub> is a basic or hydrophobic amino acid;

 $A_{17}$  is not present or, if present, is a small amino acid;

 $A_{18}$  is not present or, if present, is a basic amino acid; or a

modified form of formula (1) and the N-terminal acylated and/or C-terminal amidated or esterified forms thereof wherein each of 1-4 cysteines is independently replaced by a hydrophobic amino acid or a small amino acid.